

The listing of claims presented below replaces all prior versions and listings of claims in the application.

### Listing of Claims

Claims 1-10 (cancel).

Claim 11. (Currently Amended) A method of screening using wild type fruit fly *Drosophila melanogaster* adults for detecting long-term brain plasticity inducing ~~activities~~ activity of a single neuroactive drug chemical agent comprising the steps of:

- (a) exposing wild type fruit fly *Drosophila melanogaster* adults to the ~~at least one~~ neuroactive drug for about seven days,
- (b) measuring different locomotor activities in flies of step (a),
- (c) identifying a specific alteration in a locomotor ~~activities~~ activity in the flies of step (b) as characteristic of continuing effect of exposure to the neuroactive drug,
- (d) continuing chronic exposure of the drug to flies of step (a) for 10 days followed by maintaining the flies in a drug free media for 30 days,
- (e) measuring locomotor activities in flies of step (d), and,
- (f) identifying a specific alteration in locomotor activity, in flies of step (e) indicative of long term plasticity alteration, wherein in step (a) and step (d) the wild type fruit fly adults are exposed to only one neuroactive drug.

Claim 12. (Currently Amended) The method of claim 11 wherein the ~~vertical~~-locomotor activity measured in step (c) is height climbed, distance walked and climbing speed.

Claim 13. (Currently amended) The method of claim 11 wherein the ~~vertical~~ locomotor activity detected as altered in flies in step (c) is climbing speed.

Claim 14. (Previously Presented) The method of claim 11 wherein the locomotor activity measured in step (f) are distance walked, height climbed and climbing speed.

Claim 15. (Previously Presented) The method of claim 11 wherein the locomotor activity detected as altered in flies in step (f) is climbing speed.